

CLAIMS

1. An active matrix organic EL display device including a pixel that has an organic EL element and a polysilicon TFT for controlling said organic
5 EL element which are disposed adjacent to each other, the pixel being formed in each of regions partitioned into a matrix by a plurality of intersecting data lines and scanning lines, wherein

said organic EL element has a cathode electrode provided in at least a region excluding a region over said polysilicon TFT.
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2. An active matrix organic EL display device according to claim 1, wherein said cathode electrode is provided continuously over two or more adjacent pixels in a direction of said data line or scanning line.

15 3. An active matrix organic EL display device according to claim 2, wherein

said organic EL element includes a light-emitting region, and said cathode electrode is formed to enclose or cover said light-emitting regions of said two or more adjacent pixels.
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4. An active matrix organic EL display device according to claim 1, wherein

said cathode electrode is provided in a region which excludes said region over said polysilicon TFT and excludes a region over one wiring line
25 of said data line and scanning line that partitions said pixel regions.

5. An active matrix organic EL display device according to claim 4,
wherein

said cathode electrode is provided continuously over two or more
adjacent pixels in a direction of one of said wirings.

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6. An active matrix organic EL display device according to claim 5,
wherein

said organic EL element includes a light-emitting region, and said
cathode electrode is formed to enclose or cover said light-emitting regions

10 of said two or more adjacent pixels.

7. An active matrix organic EL display device including a pixel with
an organic EL element, the pixel being formed in each of regions partitioned
into a matrix by a plurality of intersecting data lines and scanning lines,

15 wherein

said organic EL element has a cathode electrode which is provided in
at least a region excluding a region over one wiring line of said data line and
scanning line that partitions said pixel regions and provided continuously
over two or more adjacent pixels in a direction of said one wiring line.

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8. An active matrix organic EL display device according to claim 7,
wherein

said organic EL element includes a light-emitting region, and said
cathode electrode is formed to enclose or cover said light-emitting regions

25 of said two or more adjacent pixels.

9. An active matrix organic EL display device according to any one of claims 1 to 6, wherein

an area between opposite edges of the region where said cathode electrode is formed and the region where said polysilicon TFT is formed is
5 20 μ m or more.

10. An active matrix organic EL display device according to any one of claims 4 to 8, wherein

an area between opposite edges of the region where said cathode electrode is formed and the region where one of said wirings is formed is 20
10 μ m or more.

11. An active matrix organic EL display device according to any one of claims 2, 3, and 5 to 8, wherein

15 said cathode electrode provided continuously over two or more adjacent pixels is formed in a strip,

said active matrix organic EL display device further includes at least one cathode electrode wiring which extends in the direction of the narrow area of the cathode electrode, and

20 said cathode electrodes in strips are arranged along said cathode electrode wiring and each of said cathode electrodes is connected to said cathode electrode wiring.

12. An active matrix organic EL display device according to any one of claims 1 to 8, wherein

said cathode electrode comprises a vapor deposition layer including

lithium or a lithium compound and aluminum.

13. A method for manufacturing an active matrix organic EL display device including a pixel that has an organic EL element and a polysilicon TFT for controlling said organic EL element which are disposed adjacent to each other, the pixel being formed in each of regions partitioned into a matrix by a plurality of intersecting data lines and scanning lines, comprising the steps of

forming said polysilicon TFT on a substrate, and forming a cathode electrode of said organic EL element on said substrate with electron beam vapor deposition using a vapor deposition mask covering at least a region where said polysilicon TFT is formed.

14. A method for manufacturing an active matrix organic EL display device according to claim 13, further comprising the step of forming said cathode electrode in a strip to be provided continuously over two or more adjacent pixels in a direction of said data line or scanning line.

15. A method for manufacturing an active matrix organic EL display device according to claim 14, wherein said organic EL element includes a light-emitting region, further comprising the step of

forming said cathode electrode to cover said light-emitting regions of said two or more adjacent pixels.

16. A method for manufacturing an active matrix organic EL display device according to claim 14, further comprising the step, before forming

said polysilicon TFT, of

forming on said substrate at least one cathode electrode wiring which extends in the direction of the narrow area of the cathode electrode, and in forming said cathode electrode in a strip, connecting each of said cathode
5 electrodes formed in strips to said cathode electrode wiring through contact holes.

17. A method for manufacturing an active matrix organic EL display device according to any one of claim 13 to 16, further comprising the step of
10 forming said cathode electrode with material including lithium or a lithium compound and aluminum.